



BEST AVAILABLE COPY

Docket No. N1085-00251

Inventors: Yung-Cheng Chen et al.
"Control Of Exposure energy On A Substrate"
Sheet 1 of 8

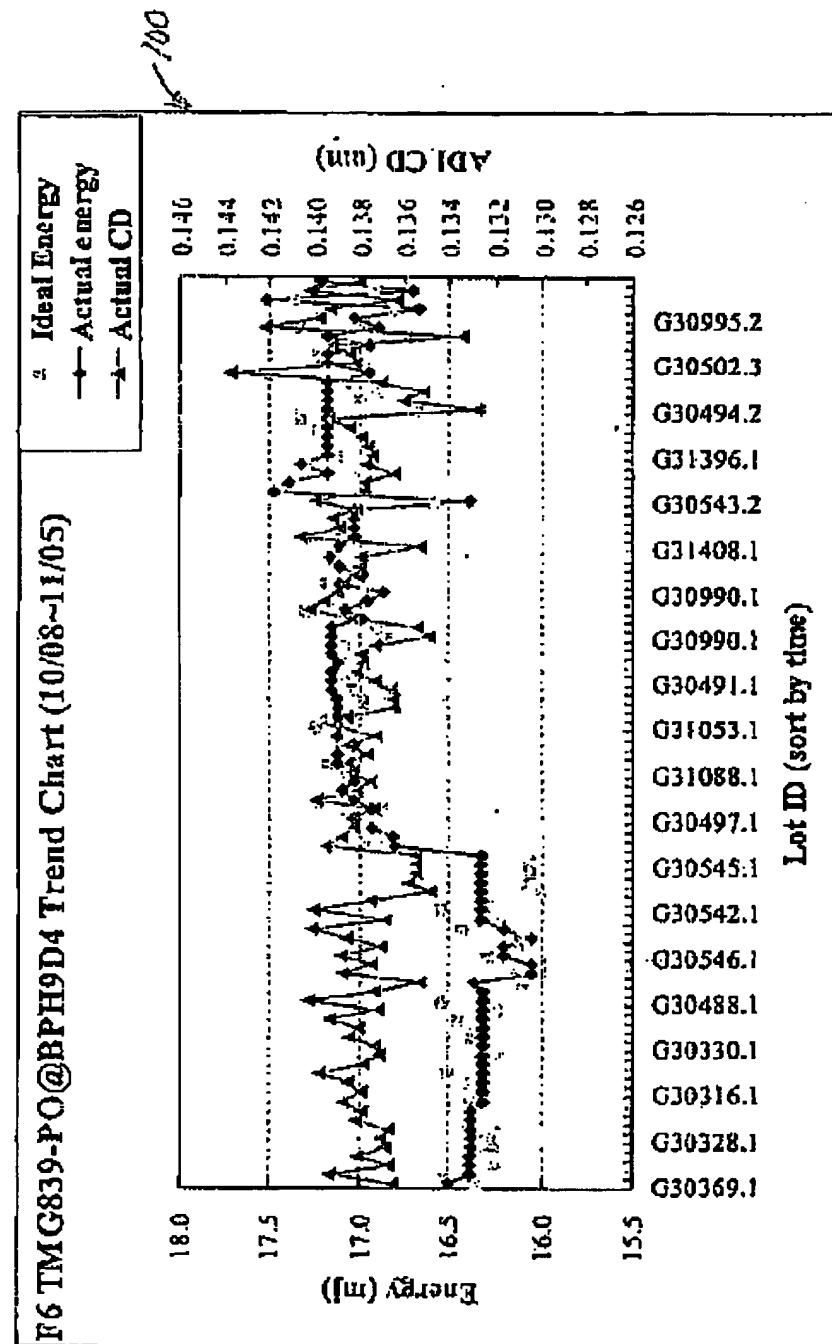


FIG. 1

Sum/100A

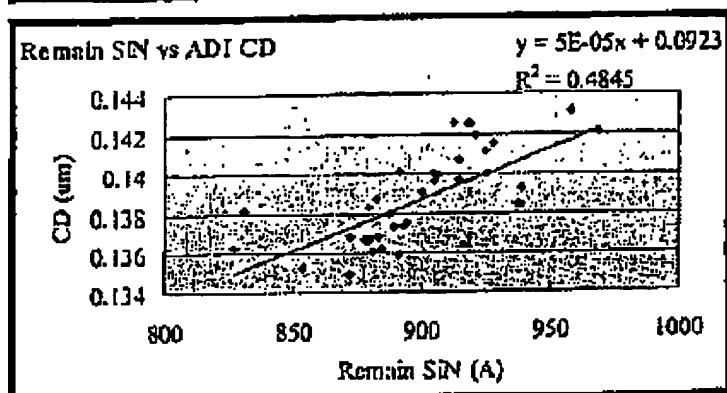


FIG. 2A

1nm/100A

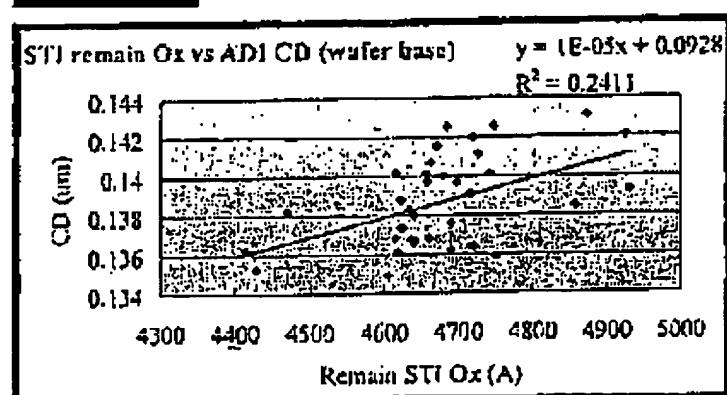


FIG. 2B

$$CD = 5 \times 10^{-3} (SiN) + 0.0939$$
$$(CD - CD_{target}) = 5 \times 10^{-3} (SiN - SiN_{target})$$
$$(CD - 0.138) = 5 \times 10^{-3} (SiN - 882)$$
$$\Delta E_{ex} = 1.4 \times 5 \times 10^{-3} (SiN - 882)$$

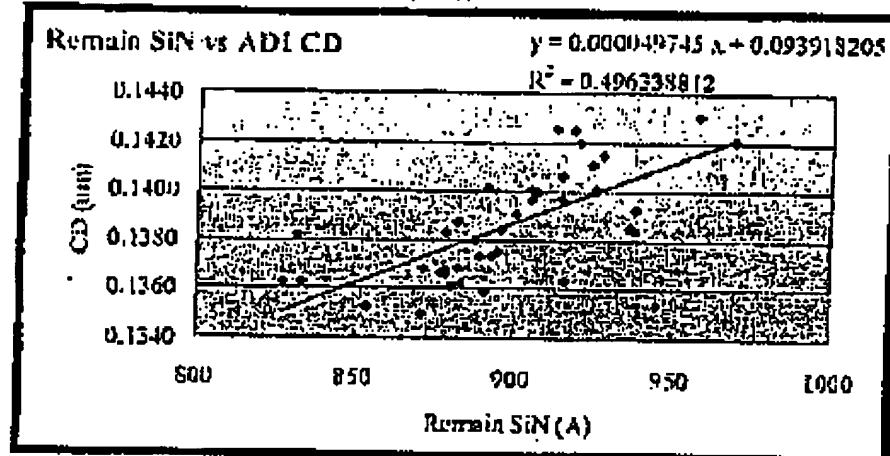


FIG. 3

Segment 1 $\Delta CD = -0.4029 \times (SIN - 805) / 10^4$ $870 \leq SIN < 970$
 Segment 2 $\Delta CD = 1.0345 \times (SIN - 891) / 10^4$ $870 \leq SIN < 920$
 Segment 3 $\Delta CD = -1.8435 \times (SIN - 942) / 10^4$ $920 \leq SIN < 940$
 Segment 4 $\Delta CD = 1.3408 \times (SIN - 931) / 10^4$ $SIN \geq 940$

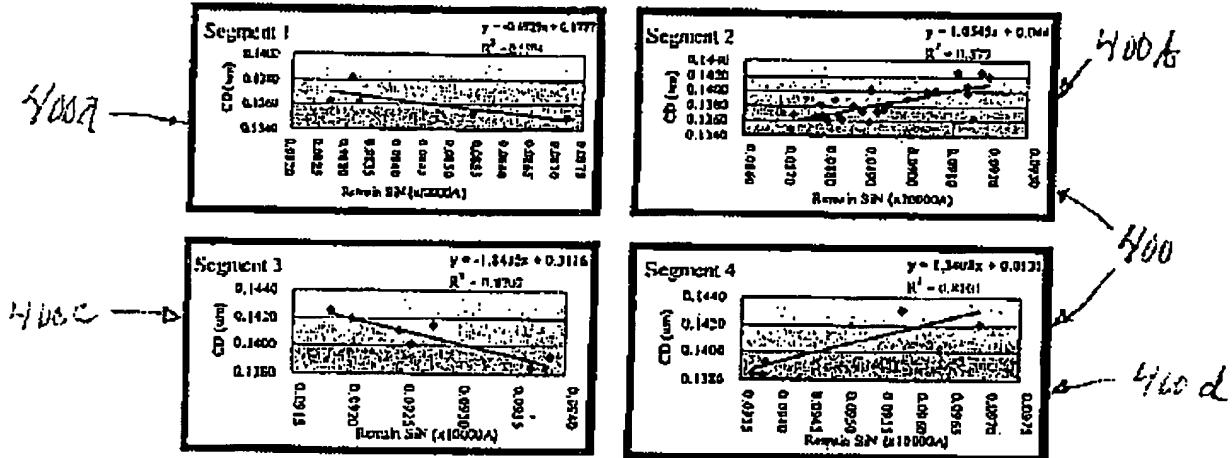
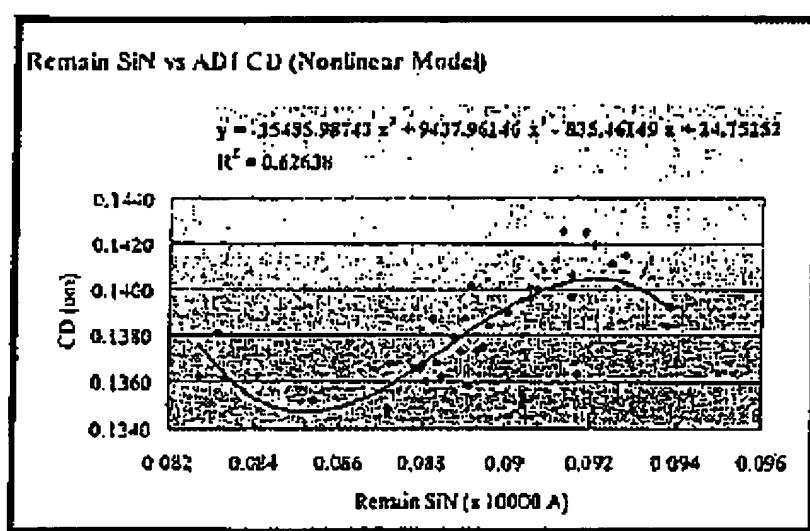


FIG. 4

$$CD = -35485.98743 \times SiN^3 + 9437.96146 \times SiN^2$$
$$- 835.46149 \times SiN + 24.75252$$



500

FIG. 5

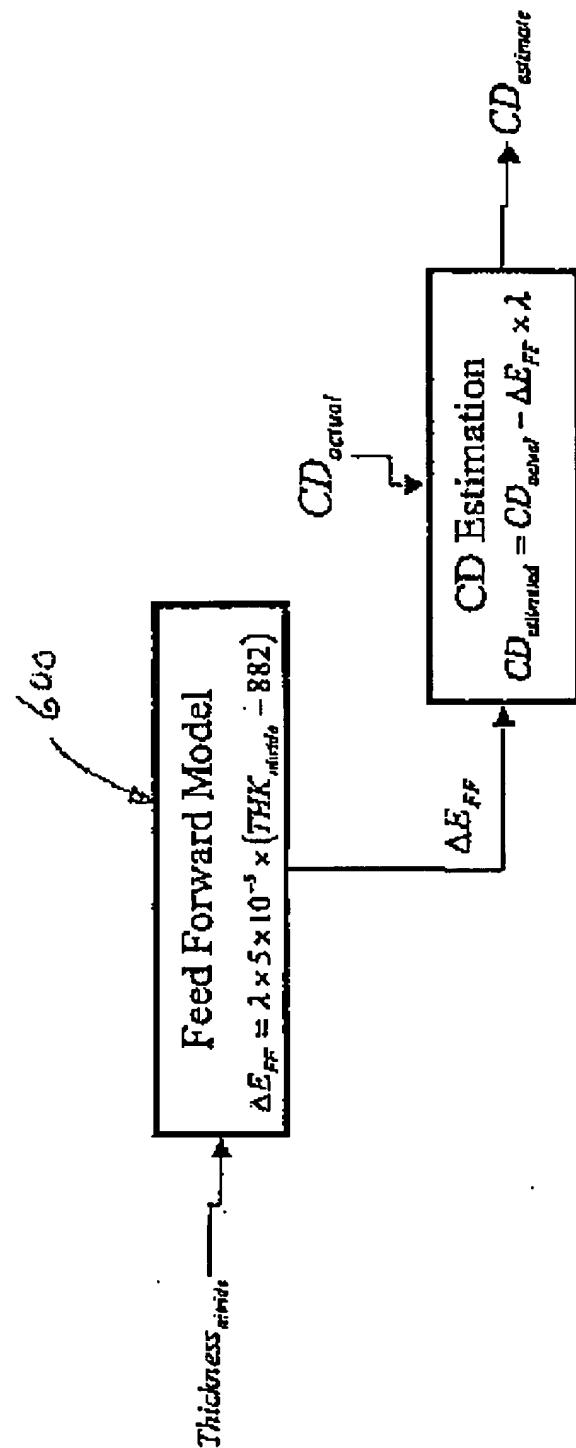
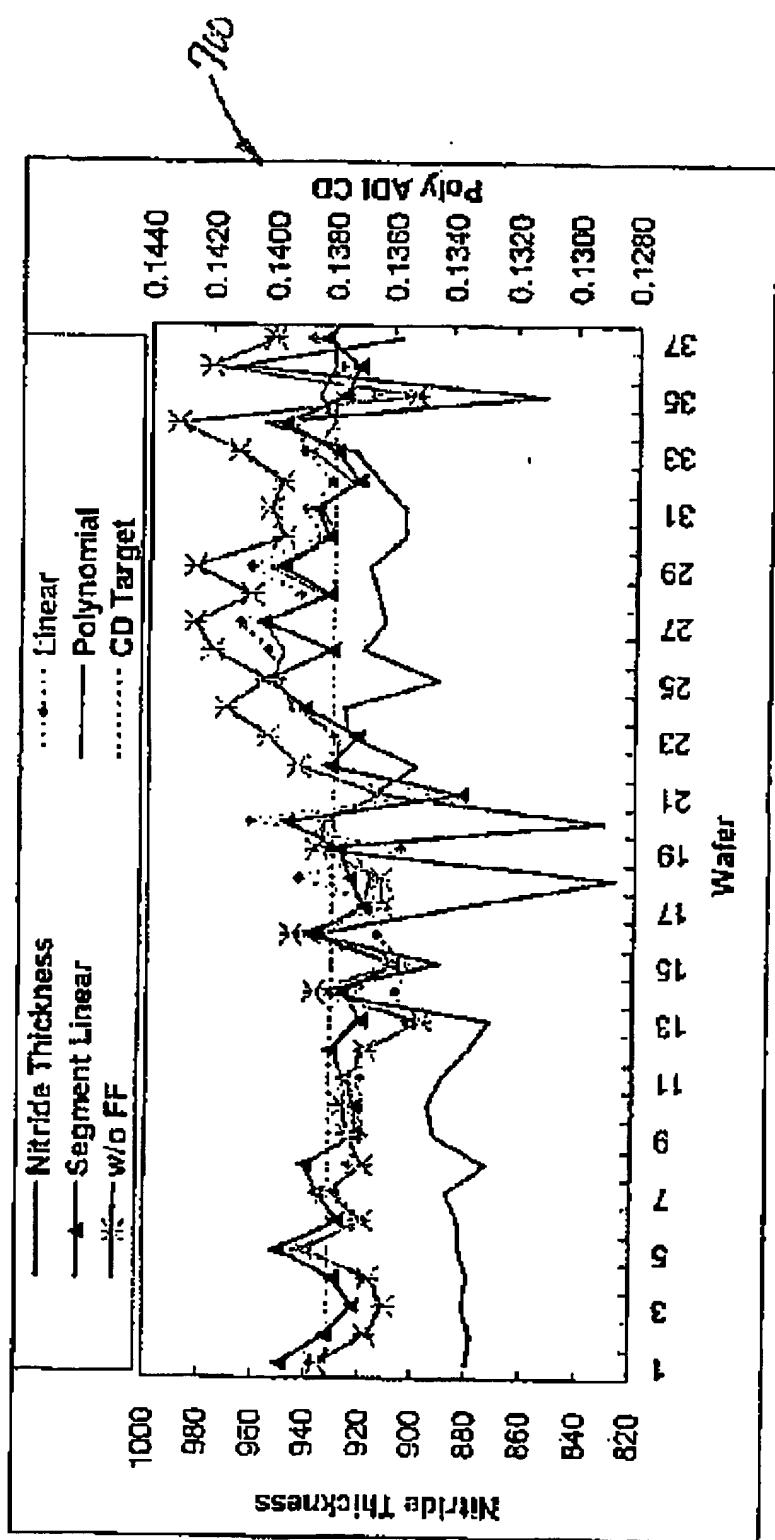


FIG. 6



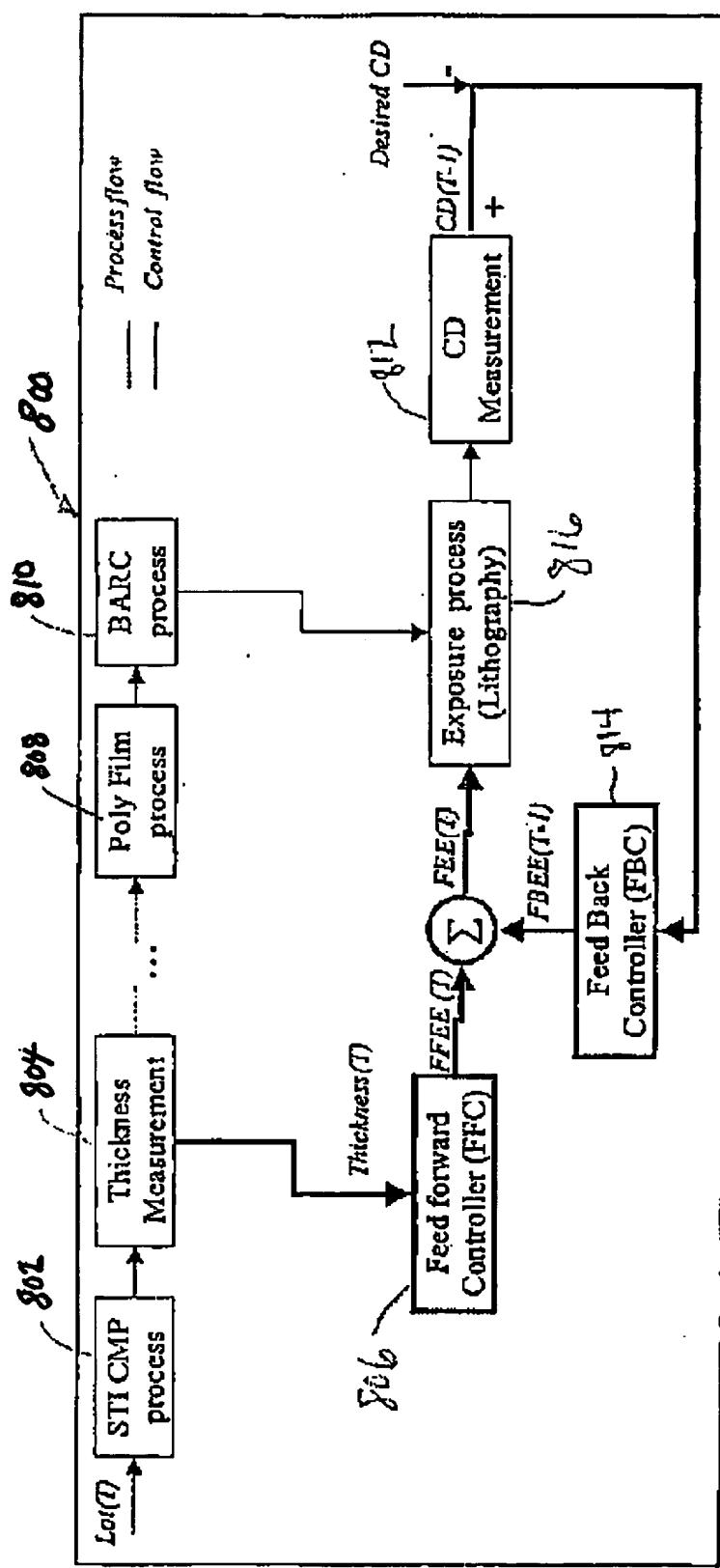


FIG. 8